REMARKS

Claims 1-14 remain in this application. Claim 1 was amended and claims 9-14 were added. Reconsideration in light of the remarks and amendments made herein is respectfully requested.

The present invention is directed to an electrolysis cell for electrolyzing water to transform it into Free Radical Solution (FRS) water (abstract). The electrolysis cell includes a pair of flat electrodes coupled to (for example, fixedly attached or coated onto) a flat proton ion exchange membrane (para. 0009). The flat proton ion exchange membrane is placed in between the two flat electrodes. In one embodiment, the electrodes are flat mesh electrodes (para. 0023). This configuration, as claimed, provides improved water flow around ion exchange membranes and electrodes with increased production of electrolyzed water for use in generating electric energy (paras. 0005, 0007 and 0009).

Claim Rejection under 35 U.S.C. §102

The Office Action rejected claims 1-8 under 35 U.S.C. §102(b) as being anticipated by Ezzell et al (U.S. Pat. No. 4,265,719).

Applicants respectfully traverse.

The Ezzell reference is directed to an electrolysis of aqueous solutions employing a flexible membrane (title). The electrolysis cell 10 has an anolyte 14 and a catholyte 15 compartment with electrodes "vertically suspended" therein (col. 4, lines 14-25). The electrodes 13, 16 are welded to metal studs 117, 121 for structural support and electrical connection. Id. These metal studs 117, 121 are attached to the opposite side walls of the electrolysis cell housing 11a. According to the Ezzell reference, the pressure differential between the anolyte 14 and catholyte 15 compartments may "force the non-rigid membrane into intimate contact with the adjacent, parallel overall surface of the cathode" (col. 5, lines 28-32). However, during hydrolysis, gas bubbles are formed on the cathode surface 16, creating "a quite erratic flowpath" that makes "it quite improbable that the somewhat floppy membrane 12 maintains a constant intimate contact with the cathode 16" (col. 5, lines 32-41).

Independent claim 1

Amended independent claim 1 recites "a flat proton ion exchange membrane placed in between and fixedly attached to two flat mesh electrodes."

Unlike the Ezzell reference, the present invention, as claimed in independent claim 1, provides for improved water flow around ion exchange membranes and electrodes by fixedly attaching the two flat mesh electrodes to the opposite sides of the flat proton ion exchange membrane. Hence, increasing production of electrolyzed water for use in generating electric energy.

The Ezzell reference fails to disclose, teach or suggest that the two flat mesh electrodes are fixedly attached to the membrane. In fact, the Ezzell reference notes that "[w]hen the cell is in operation, it is not certain whether the membrane maintains contact with the adjacent cathode surface or not due to the bubbles rising therebetween (col. 6, lines 34-37). Conversely, the flat proton ion exchange membrane of the present invention, as claimed in independent claim 1, maintains contact with the adjacent cathode and anode during cell operation. Hence, independent claim 1 is patentably distinct from the Ezzell reference. Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

Dependent claims 2-10

Claims 2-10 depend from claim 1. Thus, these claims are patentable for the same reasons advanced with respect to claim 1.

Independent claim 11

Independent claim 11 recites "a flat proton ion exchange membrane, a first flat electrode and a second flat electrode, the flat proton ion exchange membrane having a first side and a second side, the first flat electrode coated on the first side of the flat proton ion exchange membrane and the second flat electrode coated on a second side of the flat proton ion exchange membrane."

The Ezzell reference fails to disclose, teach or suggest that the two flat electrodes are coated onto the membrane. Unlike the Ezzell reference where it was uncertain whether the membrane maintains contact with the adjacent cathode surface during cell operation, by coating the electrodes on the flat proton ion exchange membrane, as claimed in independent claim 11, the flat proton ion exchange membrane maintains constant contact with the adjacent cathode and

anode during cell operation. Hence, independent claim 11 is patentably distinct from the Ezzell reference.

Independent claim 12

Independent claim 12 recites "a flat proton ion exchange membrane, a first flat mesh electrode, a second flat mesh electrode and a third flat mesh electrode, the flat proton ion exchange membrane having a first side and a second side, the first flat mesh electrode coupled to and parallel with the first side of the flat proton ion exchange membrane, the second flat mesh electrode and the third flat mesh electrode are coupled to and parallel with the second side of the flat proton ion exchange membrane."

The Ezzell reference fails to disclose, teach or suggest that the two flat electrodes are coupled to the membrane. Hence, independent claim 12 is patentably distinct for the same reasons advanced above for independent claims 1 and 11.

Dependent Claim 13

Claim 13 depend from claim 12. Thus, this claim is patentable for the same reasons advanced with respect to claim 12.

Independent claim 14

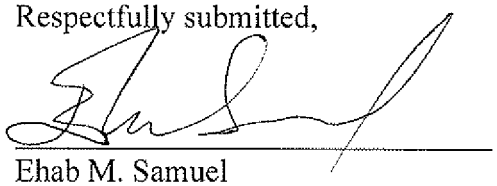
Independent claim 14 is directed to at least two structures in series for generating Free Radical Solution water, as shown in FIG. 7. Each structure having a flat proton ion exchange membrane placed in between two flat mesh electrodes. The first structure outputting generated Free Radical Solution water through a first outlet channel and hydrogen rich water through a second outlet channel. The second structure having a first and a second inlet channels. The first inlet channel is coupled to the first outlet channel of the first structure for receiving the Free Radical Solution water. The second inlet channel is coupled to the second outlet channel of the first structure for receiving the hydrogen rich water. As can be appreciated, this configuration enhances the oxidation reduction potential of the electrolysis cell.

The Ezzell reference does not disclose, teach or suggest two structures coupled to one another, each having a flat proton ion exchange membrane placed in between two flat mesh electrodes. Hence, independent claim 14 is patentably distinct for the Ezzell reference.

Applicants respectfully submit that all the claims remaining in the application are now in condition for allowance, and respectfully requests that the application be passed to issue. Should any residual matters left to be resolved, the Examiner is invited to contact the undersigned agent at 949.732.6682 (office) at his/her convenience.

The Director is authorized to charge any additional fee(s) or any underpayment of fee(s), or to credit any overpayments to **Deposit Account Number 50-2638**. Please ensure that Attorney Docket Number 075772-010500 is referred to when charging any payments or credits for this case.

Respectfully submitted,



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